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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,070	04/19/2001	Hasan Dindi	1856-08101	9565

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EXAMINER
STRICKLAND, JONAS N

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/838,070	DINDI ET AL.	
	Examiner	Art Unit	
	Jonas N Strickland	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5 and 6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 9-18, 24-27, and 35-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Mercera et al. (WO 99/37580).

Applicant claims a process for the catalytic partial oxidation of a hydrocarbon feedstock, comprising: containing gas feed stream with a monolithic porous metal catalyst at conversion-promoting conditions effective to produce an effluent stream comprising carbon monoxide and hydrogen, wherein the catalyst comprises unsupported rhodium.

Mercera et al. discloses a catalyst comprising a catalytically active metal, which includes, rhodium, wherein the catalyst is used in a process for the preparation of carbon monoxide and/or hydrogen from the partial oxidation of a hydrocarbonaceous feedstock using the catalyst. The catalyst is comprised of a monolithic structure, such as ceramic foam (p. 12, lines 15-21). Mercera et al. also discloses wherein the catalyst may be supported on a carrier or may be unsupported (p. 4, lines 28-32).

Since Mercera et al. discloses a monolithic porous metal catalyst comprised of unsupported Rh, it would have been inherent to one of ordinary skill in the art, with

respect to claims 3 and 17 to expect the foam to have been capable of having the desired foam properties in order to have an exceptional catalyst.

With respect to claim 9, Mercera et al. discloses wherein the operating pressure of the reaction is in the range of from 2 to 125 bar, more preferably from 5 to 100 bar (p. 11, lines 3-8). With respect to claim 10, Mercera et al. discloses a ratio of oxygen- to-carbon ratio in the range of from 0.3 to 0.8 (p. 10, lines 20-22). Mercera et al. continues to disclose, with respect to claim 11, wherein the feed is comprised of methane in an amount of at least 50% by volume (p. 9, lines 15-17). With respect to the hydrogen and carbon selectivity of claims 12 and 13, it would have been inherent to achieve these values, since Mercera et al. discloses the same process and teaches wherein the selectivities of carbon monoxide and hydrogen may be optimized (p. 4, lines 1-4). With respect to claim 14, Mercera et al. discloses wherein the gas hourly space velocity may be in the range of 20,000 to 100,000,000 Nl/kg/hr.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 4, 6-8, 19, 21-23, 28-31, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mercera et al. (WO 99/37580) in view of Hershkowitz et al. (US Patent 5,883,138).

Applicant claims with respect to claims 4, 6-8, 19, 21-23, 28-31, 33 and 34, wherein the catalyst comprises platinum and wherein the feedstream is preheated to about 400°C. The teachings of Mercera et al. have been discussed with respect to claims, 1-3, 9-18, 24-27, and 35-37, and while Mercera et al. teaches having an unsupported monolithic foam rhodium catalyst, Mercera et al. does not teach the limitations of claims 4, 6-8, 19, 21-23, 28-31, 33, and 34.

However, Hershkowitz et al. teaches a catalytic partial oxidation process for the production of synthesis gas. Hershkowitz et al. continues to teach wherein the catalyst may be comprised of rhodium and platinum and that one or more metals can be

combined with other metals as a metal monolith (col. 9, lines 59-66). Hershkowitz et al. continues to disclose wherein the feedstream is preheated to a temperature of 100°-700°C (col. 12, lines 10-12).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Mercera et al., which discloses a catalytic partial oxidation process using a rhodium catalyst, based on the teachings of Hershkowitz et al., because Hershkowitz et al. also discloses a partial oxidation process for producing synthesis gas, wherein the feedstream is preheated to a temperature of 100°-700°C and wherein the catalyst is comprised of rhodium and platinum. Such modification would have been obvious to one of ordinary skill in the art, because one of ordinary skill in the art would have expected the catalytic partial oxidation process as taught by Hershkowitz et al. to be similarly useful and applicable to the catalytic partial oxidation process as disclosed by Mercera et al.

7. Claims 5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mercera et al. (WO 99/37580) in view of Fujitani et al. (US Patent 4,087,259).

Applicant claims with respect to claims 5 and 20, wherein the catalyst is pretreated by exposure to air under conditions to oxidize the catalyst. The teachings of Mercera et al. have been discussed with respect to claims 1-3, 9-18, 24-27, and 35-37 and Mercera et al. does not disclose wherein the catalyst is preheated.

However, Fujitani et al. teaches wherein a rhodium catalyst, which is used in a process for partially oxidizing hydrocarbons to a synthesis gas, exhibits consistent activity either in the form of a metal or in the form of an oxide (col. 2, lines 30-33).

Therefore, it would have been obvious to preheat the catalyst and use the oxidized catalyst in a partial oxidation process.

8. Claims 32 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mercera et al. (WO 99/37580) in view of Hershkowitz et al. (US Patent 5,883,138) as applied to claims 4, 6-8, 19, 21-23, 28-31, 33, and 34 above, and further in view of Fujitani et al. (US Patent 4,087,259).

Applicant claims with respect to claims 32 and 38, wherein the catalyst is pretreated by exposure to air under conditions to oxidize the catalyst. The teachings of Mercera et al. and Hershkowitz et al. have been discussed with respect to claims 4, 6-8, 19, 21-23, 28-31, 33, and 34, but Mercera et al. and Hershkowitz et al. do not teach the limitations of claims 32 and 38.

However, Fujitani et al. teaches wherein a rhodium catalyst, which is used in a process for partially oxidizing hydrocarbons to a synthesis gas, exhibits consistent activity either in the form of a metal or in the form of an oxide (col. 2, lines 30-33). Therefore, it would have been obvious to preheat the catalyst and use the oxidized catalyst in a partial oxidation process.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonas N Strickland whose telephone number is 703-306-5692. The examiner can normally be reached on M-TH. 7:30-5:00, off 1st Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703-308-3837. The fax phone

numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0661.

Jonas N. Strickland
May 2, 2003

WAYNE A. LANGEL
PRIMARY EXAMINER